IN THE CIRCUIT COURT OF THE
ELEVENTH JUDICIAL CIRCUIT
IN AND FOR MIAMI-DADE COUNTY, FLORIDA
GENERAL JURISDICTION DIVISION
CASE NO. 00-3030 CA 11

GAIL ROUTH,
Plaintiff,
vs.
PHILIP MORRIS INCORPORATED,
("PHILIP MORRIS U.S.A."),
et al.,
Defendants.
_____/

Miami-Dade County Courthouse
Miami, Florida
October 3rd, 2003
Friday, 8:30 a.m.

TRIAL - VOLUME 14

The above-styled cause came on for trial before

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

the Honorable Herbert Stettin, Circuit Judge, pursuant to notice.

2055

APPEARANCES:

ANGONES, HUNTER, McCLURE, LYNCH & WILLIAMS
BY: Steven Kent Hunter, Esq.
-and-
KLUGER PERETZ, P.A.
BY: Stuart Silver, Esq., and
Keisha Harris, Esq.
On behalf of the Plaintiff

SHOOK HARDY & BACON, L.L.P.
BY: Kenneth J. Reilly, Esq.
On behalf of the Defendant, Philip Morris

SHOOK HARDY & BACON, L.L.P.
BY: William Geraghty, Esq.
On behalf of the Defendant, Lorillard

ADORNO & YOSS, P.A.
BY: Anthony Upshaw, Esq.
On behalf of the Defendant, Brown & Williamson

WOMBLE CARLYLE SANDRIDGE & RICE

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

BY: Jonathan Engram, Esq.
On behalf of the Defendant, RJ Reynolds

2056

I N D E X

Witness	Direct	Cross	Redirect	Recross
DR. LUIS VILLA				
(By Mr. Reilly)	2058			

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

2057

(Whereupon, the following proceedings were held:)

THE COURT: Good morning. Please be seated.

Anything we need to take up before the jury comes in?

MR. REILLY: No, but I wish that they could put down the arms of this apparatus. I'm not using that.

MR. ENGRAM: I can put it down.

MR. REILLY: I'd just assume they do.

THE COURT: One of the jurors has asked if we could take the lunch hour from 12 to 1:30 because he has some documents to sign, and I told him yes.

(Whereupon, The jury entered the

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

courtroom.)
THE COURT: Please be seated. Good morning, ladies and gentlemen.
THE JURY PANEL: Good morning.
THE COURT: Different surroundings, but the same case. We're ready to begin now with the defense case.
Mr. Reilly.
MR. REILLY: Your Honor, we call Luis Villa.

2058

Thereupon:

LUIS VILLA, M.D.

a witness named in the notice heretofore filed, being of lawful age and having been first duly sworn, testified on his oath as follows:

DIRECT EXAMINATION

BY MR. REILLY:

Q. Good morning, Doctor.

A. Good morning, sir.

Q. Can everybody hear? It's a new courtroom and I'm soft-spoken, and I've had problems in the past.
That's good. Better? Am I better?
Doctor, would you please tell this jury your name?

A. My name is Luis Villa, L-U-I-S, V-I-L-L-A.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

Q. Doctor, what kind of doctor are you?
A. I am a pathologist and hematologist/oncologist.
Q. Doctor, you have a slight accent. Where were you born?
A. I was born in Cuba, 1945; came to this country in 1961.
Q. You practice medicine?
A. I'm sorry?

2059

Q. Do you practice medicine here in Miami?
A. Yes, I do.
Q. Could you please give the jury your medical educational background? Where did you go to medical school?
A. I graduated in 1970 from Harvard Medical School.
Q. Before you went to medical school, did you do some post-college graduate study in medical science?
A. Yes. I have a Master's degree from Rutgers Medical School, and then I transferred to Harvard where I got my medical doctorate degree.
Q. What year did you get your medical doctorate degree from Harvard?
A. 1970.
Q. Doctor, what did you do after you received

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

your medical degree?
A. After I graduated, I came to Miami, where I -- I trained one year of what's called internal medicine, which is essentially everything except surgery, and then after that, I went to Washington, to the National Institutes of Health in Bethesda, Maryland, and I trained for two years in what's called clinical pathology, with a subspecialty in

2060

hematology, which is blood disorders.
Q. Doctor, could I stop you right there?
A. Yes.
Q. I don't know whether the jury is familiar with the National Institutes of Health. Would you tell them what that is?
A. The National Institutes of Health is probably the premier research institution in the world, and it is supported by a federal grant. Any patient, for example, that is accepted to go to the National Institutes of Health is entirely treated gratis. There is no -- there is no charge.
And everyone in there is an employee of the federal government, so all that happens in the National Institutes of Health is investigational medicine. That's the purpose of the National Institutes of Health. And there's different institutes. There's institutes for lung diseases,

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

institutes for cancer, institute for rheumatic diseases, so there's different institutes that do individual and independent research.

Q. Is being an intern there or spending the two years that you spend there highly competitive?

A. Yes, sir, highly competitive.

Q. What did you do after your two years at

2061

the National Institutes of Health?

A. After that, I was actually -- I had planned and everything was ready for me to go back to Harvard, but there were health problems in my family, so I came back to Miami, and I finished my pathology training and education. That took another two years.

After finishing that, I went on to train further in internal medicine, so that I could then proceed and train in the subspecialties of hematology and oncology, so that took another four years -- I'm sorry -- five years.

So from the time I graduated to the time I finished my training, it was from 1970 to 1978, so that was eight years of postgraduate training.

Q. Doctor, is it unusual for a physician to have taken intern or residency in pathology, hematology, internal medicine and oncology?

A. It is highly unusual, yes.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

Q. How many physicians would you estimate in this country have those qualifications?
A. Less than 20.
Q. Doctor, after you -- well, let me ask you this. While you were at the University of Miami, engaged in these residency programs, did you receive

2062

any honors or awards?
A. Yes. At the end of my internship year, I was an Intern of the Year of internal medicine. When I -- my last year of pathology, I was the chief resident in pathology. My last year of internal medicine I was chief resident of internal medicine.
Q. How does one become the chief resident? Why is that an honor?
A. Well, in theory, you've got to be the best, the best of the group.
Q. Doctor, after you completed your residency, do you sit for examinations?
A. Yes, sir.
Q. And is that part of what they call the board certification process?
A. Well, you don't have to; that's optional. But after you complete a residency, you are what's called board eligible, meaning you have spent enough time in the training system so that you are eligible to take the exam. You can take it if you want, or

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

if you don’t want, you don’t have to take it. I took them all.

Q. And I presume you passed them all?

A. First time, yes, I did.

Q. So that meant that you were board

2063

certified in how many areas of medical specialty?

A. Six areas.

Q. Would you tell the jury what they are?

A. Sure. I’m board certified in internal medicine. I’m board certified within internal medicine in two specialties hematology, which is blood disorders, and oncology, which is cancer.

I’m board certified in two areas of pathology: One is clinical pathology, which is the subspecialty that handles laboratory procedures, and anatomic pathology, which is the subspecialty that handles tissues, detecting the tissues and interpreting the tissues.

I’m also board certified in the subspecialty of hemopathology, which is a subspecialty in pathology which specializes in interpretation of the blood-forming organs.

Q. Okay. You mentioned the word "tissues." We’re going to use a lot of words today that you have complete familiarity with, and if you say "tissue" to me, I think of a Kleenex, but there will

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

be words that I'm going to stop you along the way and ask you if you'll please explain them to the jury. Okay. An example of that will be right now when I ask you to explain what you mean by a

2064

pathologist looks at the tissue?

A. The tissue is a fabric of the organ. You take a piece of liver, that's a piece of the tissue of the liver. You take a piece of the lung, that's the tissue of the lung. It's fabric, whatever makes the organ. Skin is tissue; heart is tissue; brain is tissue. It's a general word that means whatever that organ is made up of is the architecture of that particular organ.

Q. Doctor, can you tell me, after you completed your residences, and after you -- well, after you completed your residencies, did you take on any teaching responsibilities at the University of Miami School of Medicine?

A. In my last year, I was on the faculty both of oncology and pathology.

Q. All right. Did you become an assistant professor of medicine at the University of Miami?

A. Yes, I did, during that last year, and also clinical assistant professor of pathology.

Q. Okay. As an assistant professor, who did you teach?

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

A. It was -- at that point in my life, it was strictly medical students.
Q. Since then, who have you been teaching, or

2065

who have you taught at the University of Miami School of Medicine?
A. After, I was a director of the pathology course while I was there at the University of Miami. That's the second-year course.
After that, when I went to private practice, I have not taught medical students; I have lectured and taught postgraduate -- people who are already medical doctors.
Q. Doctor, you're licensed here in Florida, I presume?
A. Yes, sir.
Q. Are you licensed in any other states?
A. No.
Q. Doctor, can you tell this jury what hospitals you've had privileges at and performed services in either pathology, hematology, oncology, internal medicine? Where have you practiced here in town?
A. Well, I think it's fair to say that my career has had three phases. I started out mostly -- obviously I went to several hospitals, but most of my initial activities were at Victoria

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

Hospital, and I was chief of medicine at Victoria Hospital and chief of pathology, and at one time, I

2066

was chief of both departments.

Then when Victoria merged with Cedars, I went to Cedars, and I was the chief of pathology at Cedars until about three, four years ago, at which time I -- my practice moved to Mercy Hospital, and now all of my practice is concentrated at Mercy Hospital.

Q. And do you have any administrative positions at Mercy Hospital?

A. Until last year, I was the chief of the department of hematology and oncology.

Q. Doctor, can you tell the jury how you spend your time these days? What medical practice do you have today?

A. My practice is essentially -- it's a hybrid practice. It's -- the mornings I spend mostly in the laboratory, doing pathology. Interpreting tissues is the vast majority of what I do in the mornings.

In the afternoons, I see patients, so I go to my office, which is right next door in the professional building, and I see patients. I see an average of about 70 to 80 patients a week in my office.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf Available from www.industrydocuments.ucsf.edu/docs/jmjl0001

Q. Doctor, can you tell the jury whether or

not you're a member of any professional medical associations.
A. Yes, I am. I am a fellow of the College of American Pathologists, I'm a fellow of the American College of Physicians, and of the Society of Clinical Pathology.
Q. Doctor, can you tell the jury whether you're the president of the League Against Cancer?
A. Yes, I am -- I'm the president of Liga Contra El Cancer, also known as the League Against Cancer. I was the president -- I should go back.
I've been a volunteer doctor for the League since 1979. I was president for 11 years, volunteer for a year and a half, and I'm again president of the League, which is a chair of the organization that treats patients that simply cannot afford their medical care.
Q. Doctor, can you tell the jury whether or not you have published medical/scientific literature in your areas of medical specialty?
A. Yes. I've published in several venues, yes.
Q. You've published in peer-reviewed literature?
A. Yes, I have.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

Q. You have published in hospital-based literature?
A. Yes.
Q. And community medical literature?
A. Yes, I have.
Q. Doctor, can you tell the jury whether or not you've lectured to practicing physicians here in Florida and elsewhere in the world?
A. Well, I've lectured enumerable times here in Florida and I've lectured in Central and South America, to graduate students, physicians.
Q. Can you tell the jury on what topics you've lectured, and start here in Florida, just broadly?
A. I've lectured on a wide variety of topics, but essentially 100 percent of them have to do with pathology, as it applies to cancer and coagulation and hematologic problems, problems of blood.
Q. Have you lectured on lung cancer?
A. Yes, I have.
Q. Have you lectured on the various types of lung cancer?
A. Yes, I have.
Q. Have you lectured on the genetics involved in lung cancer?

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

A. Yes, I have.
Q. Doctor, can you tell the jury whether or not you've -- well, you said you've lectured to physicians in Central and South America. Can you just give the jury a sense of some of the countries that you've lectured to physicians in Central and South America?
A. Costa Rica, El Salvador, Colombia, Ecuador, multiple times in Ecuador, Argentina.
Q. Have you lectured on therapies, medical therapies for the treatment of cancer?
A. Yes, I have.
Q. When you're lecturing like that, are you talking to the physicians in the audience about what is cutting-edge medical science in these areas?
A. When you lecture, you do really two things: You give the audience a sense of what's new and what's to be expected, and you give the audience the benefit of education, the individual's education, and my experience. That's what you do.
So it's a mixture of prediction -- it's a mixture of experience, mixture of knowledge.
Q. And these talks that you've given, these conferences you've spoken at, were you there as an invited speaker?

2070

A. Yes, that is correct.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

Q. Now, we've gone through, in the ten minutes, we've talked about your medical career. Do you go around telling people about this all of the time?
A. Not unless I'm in a courtroom.
Q. All right. Doctor, have you recently returned from a conference in the field of oncology?
A. Yes. I just took a course at Harvard Medical School all last week.
Q. How often is this conference held?
A. Every three years.
Q. And what's the purpose of the conference?
A. The main purpose is to bring medical oncologists up to date in what's the latest, both in the field of research and the field of practicality, how to treat patients. That's the main purpose.
Q. Doctor, we've talked about a lot of topics with you, but we haven't talked about research. Can you tell this jury whether or not you are engaged and have been engaged in medical/scientific research, clinical research?
A. I've been engaged throughout my medical career in clinical research. I have not done detailed laboratory, what's called bench research,

2071

ever since my days at the National Institutes of Health in Bethesda, but I've continued to do

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

clinical research.
For example, recently, my group was actually one of the main and most productive groups in the country getting tissues for a national study on a very specialized technique that's called gene microarray assays; the purpose of that technique being to predict, by genetic means, how cancer will behave.
And on my clinical side, my oncology practice, we're engaged in several protocols that compare treatment modes. In other words, it's like a patient and you tell the patient: There are two avenues that we can use, two types of treatments that we can use, we're going to choose at random. If you agree, meaning the patient agrees, and then in a few years, we will know which one is the best.
That is clinical research at its best as practice in this country.
Q. All right. Gene assay?
A. Microarray.
Q. Microarray. Would you write that down and would you explain to the jury what that is, because we're going to be talking more about that in a

2072

little bit.
A. (Witness complied.)
MR. REILLY: Can everybody see that?

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

A. I don’t know if everyone is familiar with what a gene is, but --
Q. Maybe you could start there.
A. I will start there.
We are all -- we all have in our background a number of genes. Half of them come from papa, half of them come from mama.
And the one initial cell has all those genes. When the egg from the mother and the sperm from the father get together, that one cell starts it all. The baby comes from that; we grow and we die.
So there’s one cell that has all the genetic components. Think of a computer program. In that program, all the information that you need to function is in that program. Well, all of the information that we need to be humans is in that initial cell.
But what happens to those genes is at first, many of them are activated. Why? Because we have to form, from that one cell, we have to form liver, brain, lung, so all the genes are activated.

2073

But, obviously, we’re born, and we get to the point where we all have a liver and two lungs and a brain, et cetera. At that point, certain genes have to be deactivated.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf Available from www.industrydocuments.ucsf.edu/docs/jmjl0001

So there's a mechanism by which a gene keeps working, so that it goes to a liver, functions as a liver, and a certain set of genes will function as brain, and a certain set of genes will function, let's say, as lungs. Okay. The other genes are deactivated, turned off, because you don't want to have liver in your brain and you don't want to have lung in your liver. So everything is specialized.

So there is activation and deactivation of the genetic program, just like you can turn off certain information in your computer.

MR. HUNTER: Judge, with all due respect, I would like to have questions and answers.

THE COURT: I agree. Ask him questions.

BY MR. REILLY:

Q. Can you explain to the jury, Doctor, how the genes turn on and off, and how this assay determines what genes are being turned on and off?

A. Well, we don't know how genes are turned on and off. Simple answer.

However, this assay essentially -- the

2074

reason it's called microarray is because there are lines of chemicals, you put the blood in there, and by certain specialized techniques, we can tell which of the genes are on and which of the genes are off.

And that tells you why a certain tissue is

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

working or not working.
So it gives you a profile. You can put in a tumor, and that tumor will have a certain profile, and that profile is different between different tumors, and it is different even from tumors of the same tissue. Like, let's say, tumors of the lung, there's going to be a difference between what's on and what's off.
So this technique is designed to tell us what's on and what's off. And by that, we want to predict the differences between different tumors. It can be applied to many other things. It can be applied to what tumors will respond to what medicine, so this has enormous and widespread implications.
Q. Is this cutting-edge pathology science?
A. Well, fortunately, and perhaps even unfortunately, I think that this gene will put many of us that have done business for many, many years, looking up tissues under the microscope, eventually

2075

things like this will replace the microscope.
Q. Doctor, can you tell us -- can you tell this jury whether or not you've been involved in clinical research with a chemotherapy known as Iressa?
A. Yes. We treated people with Iressa in our

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

group before it became commercially available, under different protocols.

Q. Clinical trials?

A. Clinical trials. And also Iressa was available for people who had no other choice and were terminal, under special circumstances, from the National Cancer Institute and the manufacturer.

Q. Doctor, you indicated that you have medical specialties in pathology and oncology and that you practice both of those areas.

Can you tell the jury whether that gives you an unusual perspective for the care and treatment of your patients?

A. Well, I think it gives -- it gives me and people of my background a tremendous perspective, because we are able to understand the basics of what cancer is, how we classify cancer, how we predict the behavior of cancer.

I do not need to rely on someone else to

2076

classify a tumor for me or to predicate the behavior and to tell me this is more likely to respond to A, B or C. I do it myself. I have the entire spectrum. Then I treat the patient with what I think is best, and I learn from that patient, whether my initial impression under the microscope was correct or incorrect.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf Subject to http://www.industrydocuments.ucsf.edu/docs/jmjl0001

So it gives me the ability to profit from experience, which other doctors who do not have my pathology background simply do not enjoy.

Q. Doctor, have you been called upon to testify in court before?

A. Yes, I have.

Q. Can you tell the jury, have you ever testified in a case involving cigarette smoke before?

A. Yes, I have.

Q. On how many occasions?

A. Once.

Q. Can you tell the jury what the circumstances of testifying in that case were, what was that case about, in two sentences?

A. It was a case about a gentleman that had cancer of the tongue, the mouth, and cancer of the bladder, and the issue was whether smoking was

2077

directly responsible for the cancer.

Q. And what was your opinion in that case?

A. My opinion is that it was; that smoking was directly responsible for it. That was a heavy smoker for many years.

Q. Was Mr. Hunter the plaintiff’s lawyer in that case?

A. Yes, sir.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

Q. Was he the lawyer that hired you to come and talk to a jury in that case?
A. Yes, sir.
Q. Doctor, can you give the jury a sense of how often lawyers come to you and ask you to serve as an expert?
A. Since 1985, ’86, I have reviewed cases for lawyers. I generally receive two to four new cases every month that I review. It’s a mixture of pathology slides and/or clinical cases.
I am called to testify by means of deposition probably once or twice a month. That would be an average. And I have appeared in court, I would say an average of three to five times a year for the last 15 years.
Q. Doctor, can you tell us what you ordinarily do in connection with this -- well, first

2078

of all, do you ever solicit this work in any way?
A. No. I’ve never done that.
Q. People just come to you because of your expertise?
A. I hope they do.
Q. Doctor, can you tell us whether the lawyers that come to you are fairly equally divided between people representing plaintiffs and people representing defendants?

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

A. No. They're not equally divided. I would say that approximately somewhere between 70 to 80 percent are defense lawyers, and the rest are plaintiffs' lawyers.

Q. What kinds of cases are they, ordinarily, that people come and consult with you about?

A. The vast majority are medical malpractice cases.

Q. The work that you've done in this case, is it any different than the work that you've done in any of those other cases?

A. Yes. It is considerably different.

Q. How is it different?

A. Well, the vast majority of my cases are relatively simple cases, where someone claims that a physician or a nurse or a hospital didn't do

2079

something correctly, so blame is to be apportioned and fingers have to be pointed to someone, either a person or institution.

That's not what this case is all about. This case is about -- it's a scientific question, whether a substance is directly related and is the cause of the patient's cancer. So this is a totally different case.

Q. Now, in this case, can you give the jury a sense of what you've done in connection with this

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

case?
A. Well, the first thing that happened is that someone from your office brought me the slides. I didn't know anything about the case. They just brought the pathology slides.

What we do, if you don't know what pathology slides are, is they take a piece of tissue from liver, lung, whatever, they cut a very thin -- you stain it, and you put it on a glass slide and put it under the microscope. I look at it, and I give you a diagnosis. I say this is this or that or the other, cancer of the lung, cancer of the liver. And then you try to classify the disease so that you help the clinician.

That was the first step. Someone brought

2080

the slides to me, without clinical information, and I looked at them and I said, "I think this is cancer of the lung."

And then the second step was for me to review the clinical history, what had happened to this patient, who treated her, how was she treated.

Q. Let me stop you right there for just a minute.

Why do you look at the pathology, as you say, blindly? Why don't you find out what all of the other doctors have said about it first? Why do

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

you look at it blindly?
A. That's real life. I would say that 98, 99 percent of the cases where, in real life, I interpret tissues, I have very little information, except perhaps where did the tissue come from.
So I get a blank piece of paper that says, "Biopsy from liver." That's it. That's all I get. Or "biopsy from lung." That's all I get. And then you put it under the microscope and you make a diagnosis. That's 99 percent of the cases.
Now, occasionally, I would say at most, once a week, there is a complex case where I have to call the clinician and say, "Give me some more information, because I cannot make a definitive

2081

diagnosis." But the vast majority of real-life cases, there's a piece of tissue, "Tell me what it is," and I look at it and give a diagnosis.
So I like to -- when lawyers bring me pathology material, I like to make it as close to real life as possible.
Q. Okay. You said you looked at the pathology; then you got the medical records; right?
A. That's correct.
Q. Did you get all of the medical records?
A. Yes, I did. I shouldn't say that. I got it up to that point, and more information has been

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Available from www.industrydocuments.ucsf.edu/docs/jmjl0001

flowing for the last year, year and a half.
Q. Okay. So you've been updated on the medical information?
A. That is correct. But I made predictions, as I do in real life. Based on the original pathology slides and the original treatment records, I made predictions as to what was going to happen to this patient over the next two, three, four years, based on that.
Q. What predictions did you make?
A. Well, to be specific, I made a diagnosis on the original tissue of adenocarcinoma with bronchioalveolar features. That's BAC. We're going

2082

to call it BAC.
I made predictions that this would behave in a different way than the regular run-of-the-mill cancer of the lung.
I made predictions that the patient would live longer. I made predictions that the disease would come back in a local area, not elsewhere in the body, as it is usual for other cancers.
And later on, as the data became available, I made predictions that she had a very good chance of responding to a new drug; that at that time was experimental, called Iressa, and she did. And I made that prediction before it really

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Available from www.industrydocuments.ucsf.edu/docs/jmjl0001

happened.
Q. In a little bit, we'll talk about why you made those predictions, why you felt it was appropriate to make those predictions, and why they came true.
But you said you looked at the medical records, the pathology. Did you also look at depositions?
A. Eventually, I did, yes.
Q. I'm going to go through the entire spectrum of things that you've done.
A. Yes.

2083

Q. You looked at the depositions of Mrs. Routh?
A. Yes, I did.
Q. And Dr. Roggli?
A. That's correct.
Q. And Dr. Barksy?
A. Yes.
Q. Doctor, do you charge for the work that you do?
A. Yes, I do.
Q. And what's the hourly rate of what you charge?
A. I charge $350 for review and conference with attorneys, $350 an hour. I charge $350 an hour

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

for coming to court in Dade and Broward. And I charge $350 for deposition time in Dade and Broward. If I have to get out of Dade and Broward, I charge $5,000 a day.

Q. And is it true that you charge that to Mr. Hunter or me or to anybody else?

A. Wholesale price. Everyone.

Q. It doesn't vary from lawyer to lawyer, client to client, case to case?

A. No, sir.

Q. Doctor, can you give this jury a sense of

2084

what portion of your annual income this kind of work represents?

A. I called my accountant a couple of weeks ago. I asked him to give me the exact percentage. And he said that the average over the last three years was exactly 7.1 percent of my earned income.

Q. Why did you make that phone call to your accountant?

A. Mr. Hunter asked me to.

Q. Mr. Hunter did?

A. He sent me a letter and said he was going to ask me, so I asked my accountant.

Q. Mr. Hunter sent you a letter in this case?

A. Yes.

Q. And he told you in that letter he was

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

going to ask you what percentage of your annual income testifying represented?
A. Yes, he did. And I was not offended. I think it's a fair question.
Q. Okay. Is that unusual for you? Have you ever received a letter from an opposing lawyer before in a case like that?
A. I have never received a letter, but I'm always asked the same question in court. I never asked my accountant before, but I did this time.

2085

Q. Okay. Doctor, can you tell us -- well, before we get into Mrs. Routh's case in particular -- oh, by the way, I should ask, how much time have you spent on this case?
A. I don't know the number of hours, but since Mr. Hunter asked me, I asked you how much I had collected, so I can tell you how much I have billed and collected.
Q. Would you tell the jury that, please?
A. It's about $27,000, over about two years.
Q. All right. And did you look that up at the request of Mr. Hunter, too?
A. Yes, I did.
Q. Doctor, let's talk now about -- let's move into Mrs. Routh's case.
Let's talk about what is oncology and what

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

is pathology. Let's just describe them, to the jury, in general, and then we'll get into this case.

A. Well, pathology basically, as it applies to this case, is a combination of laboratory techniques, like the one I described here, and looking at tissues under the microscope. That's pathology.

And what pathologists will do is to tell the clinician, this is the nature of the disease,

2086

this is the name that we're going to give it, and based on that, it should respond to A, B or C treatment and it should behave in this particular fashion.

Pathologists are like -- like the weathermen. They find a pattern and they tell the clinician, the doctor, "We believe it's going to behave in this way." That's what pathologists will do.

Then, on the other hand, the regular, in this case, oncologist, will take that information, assuming he believes the pathologist, he will prepare a course of action, a treatment, based on what the pathologist said, and treat the patient and follow the patient. That's what the oncologist will do.

Q. And can you tell us, Doctor, how often

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

you're involved in the care and treatment of patients who suffer from lung cancer?

A. Virtually every day.

Q. Can you tell us how long that's been the case that you've been dealing with patients who suffer from lung cancer?

A. Well, in my practice, lung cancer is either the third or fourth most common type of

2087

cancer that I treat. Over the years it's been breast cancer number one, prostate cancer is now becoming number one, and breast -- lung cancer is right there between them, with colon cancer also in the mixture.

But lung cancer, unfortunately, is a very, very common disease in this country and is a very common disease in my practice. So if I see an average of 70 patients a week, it is unusual for me to go to my office and not see at least one patient that I'm either following or treating with lung cancer.

To give you an idea, this week I saw two new cases, and, of course, I follow several cases that are under treatment.

Q. Of those new cases you've seen this week, were any of them BACs?

A. Well, there is a case that I think will be

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

a BAC. I saw at Liga, as chair of the organization, I saw a 46-year-old lady, never-smoker.

MR. REILLY: Judge, I object and would like to approach the bench on this.

THE COURT: Yes, sir.

(Thereupon, the following proceedings were had at sidebar:)

2088

MR. HUNTER: I object to this doctor going into a patient that he saw this week, at La Liga, and giving specifics of her care and treatments.

THE COURT: His argument is he hasn't had discovery on it; it's not fair.

MR. REILLY: I can't imagine that that's a valid objection. I mean --

THE COURT: He's surprised. His testimony is -- he has never had the opportunity to hear this. You would be saying the same thing. I'll sustain the objection.

(Thereupon, the sidebar was concluded and the following proceedings were held in open court:)

BY MR. REILLY:

Q. Doctor, don't tell me about that patient. You indicated that you see new lung cancer patients every week; right?

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

A. That's correct.
Q. Tell me this. In your last -- I didn't do the math. How many years have you been practicing pathology?
A. Since 1973.
Q. That's 30 years; right?

2089

A. That's correct.
Q. Can you give this jury a sense of how many lung cancer tissues you've looked at under the microscope?
A. That's a very difficult question, but I would say when I was at Jackson, I would see three or four a week; in private practice, maybe one a week, in 30 years. That's in pathology.
Q. All right. That's got to be somewhere in the neighborhood of two or 3,000 cases?
A. Easily.
Q. How about as an oncologist, how many lung cancer patients have you treated over the years?
A. Well, again, you have to divide things. When I was at Jackson, there were many, many cases.
In private practice, I would say the average number of new cancer patients that I see may be two or three a month. New. New cases. Then, of course, you follow the other patients.
Q. Thousands of patients?

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

A. Probably well over a thousand, yes.
Q. Doctor, let's move to talking about the lung in general, just to give this jury a short course and to orient them to the human lung. Okay.
If you could step down, Doctor, I'm going

2090

to put up a diagram or two of the lung.
Do you have a marker if you need it?
A. (Indicating.)
Q. Could you please explain, what's the anatomy of the lung, and then if you could --
A. Microanatomy.
Q. Microanatomy. Thank you.
A. Well, obviously, this is the chest. And this here is the trachea. Adam's apple right here; a little bigger in men, a little smaller in women. Right in there.
The air comes in through negative pressure. When we move the chest, negative pressure, air comes in. This is the trachea down through the bronchi.
The bronchi actually divide in here; they buy bifurcate. They go to the right side, the right lung, which is divided into three levels, and they go to the left lung, which is divided into the upper and lower.
Now, the bronchi also gets smaller and

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

smaller from the main bronchus here, which is pretty tough. They have a lot of cartilage. They have muscle. The bronchi just open and close.

Then as it goes down into the bronchioles,

the bronchi become a little softer, more pliable. They lose the cartilage that makes it tough. They also eventually lose muscle.

And eventually they lead into these little balls in here, and those are called the alveoli. And the alveoli are essentially little balls, little round spaces, where air that carries oxygen, releases the oxygen into the blood and picks up carbon dioxide that goes up, and the oxygen stays there, and that’s the basics of what the lung will do.

It is essentially an exchange mechanism to get oxygen in and to get carbon dioxide out. These are the alveoli and these are the bronchioles, as they get very, very little and become alveoli.

Q. Doctor, while you’re there, would you explain to the jury what it means to be peripheral?

A. Peripheral is simply -- this is central, and this is peripheral. Peripheral means close to the outside, and the outside is the pleura, and the pleura is a little very thin, one-cell sheet of tissue that lubricates and covers the lung.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

Q. And, Doctor, on that board, could you just list, are there different kinds of lung cancer?
A. Yes. There are several varieties of lung cancer.
Q. If you have enough room there, where you could write big, or if you would rather -- I can bring that scratch pad, if you'd like. I'd just like for you to list for the jury and sort of diagram --
A. Why don't we do it right here.
In essence, there are -- if you want to depict -- there are multiple types of lung cancer, but I'm going to try to simplify it for you, because, for clinical purposes, these are the two varieties: One is small cell, meaning that the cells are small. Biologically, it's a completely different tumor. It has details. It behaves in a different way, and it responds in a totally different way to treatment, to chemotherapy and to radiation. So this is a completely different type of tumor. But it is a lung cancer.
Then there is the nonsmall cell, and the nonsmall cell is essentially three varieties: large cell, adeno and squamous.
And how do we tell them apart? Again, we put the tissue under the microscope. That's the old

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

way. It’s the time-honored way of doing it. And the cells look different.

2093

So the features under the microscope allow me to, in most cases, although not in all cases, to define whether they’re large cell, adenocarcinoma or squamous cell carcinoma.

There are another -- at least five or six very unusual varieties that are really impractical, and they don’t mean much to the clinician. So that’s the main definition.

Q. A minute ago you used the term "adenocarcinoma with bronchioalveolar features"?

A. Correct.

Q. What is that?

A. Well, pathologists are divided between lumpers and nonlumpers, and some people -- some pathologists like to really subclassify, so you can subclassify adenocarcinoma.

Q. You know, you better explain what lumpers are and nonlumpers?

A. Lumpers, some people like to look at the big picture and just give one name. It’s like in America, we usually have one last name. In the Spanish community, you’re Gonzalez-Fernandez, blah, blah, blah; you have about 15 different last names.

This is the same thing. You can really be

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

25 very careful in looking at the adenocarcinoma
2094
1 category and divide it into multiple different
2 varieties, and this really is -- it has to do with
3 what we call differentiation.
4 Now, what does that mean? When we say
5 something is well-differentiated, it means that the
6 tissue looks like the parent, normal tissue.
7 Q. Would you write down well-differentiated
8 or differentiated? These are terms that these folks
9 are just hearing.
10 MR. HUNTER: You know, Judge, that's a
11 characterization of the evidence that's not
12 correct. They heard from Dr. Roggli.
13 THE COURT: Wait, sir. Don't give me an
14 argument on the merits, sir.
15 Overruled, sir.
16 Go ahead, sir.
17 BY MR. REILLY:
18 Q. Differentiated?
19 A. Differentiated.
20 To give you a little background,
21 differentiation means like I just said, you start
22 with one cell, and that cell differentiates into
23 brain, liver, lung. That's differentiated. What
24 happens with cancer is that it de-differentiates.
25 It gets uglier. It begins to look not like the

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

2095

parent picture.

So well-differentiated means, let's say cancer of the lung, it looks like normal cancer.

Poorly differentiated means that you have to have a lot of imagination to make sure that that's from the lung, because it doesn't really look like cancer of the lung. It doesn't look like the normal lung cancer. That's the definition of differentiation. It's either well, like normal tissue, or poorly, meaning it doesn't look very much like the normal lung tissue. That's the definition.

Now, in adenocarcinoma, you can subdivide it between very well-differentiated adenocarcinoma, and one of those varieties are bronchioalveolar carcinoma. It's very well-differentiated, meaning in many cases, it looks very much like the parent tissue.

Or poorly-differentiated adenocarcinoma, poorly-differentiated adeno CA, meaning you've got to have a lot of imagination to call it adenocarcinoma of the lung, because it doesn't look like lung at all. And that's the definition.

Q. Would you tell the jury whether or not BAC, bronchioalveolar carcinoma, is a different type of cancer from regular run-of-the-mill

2096

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

adenocarcinoma?
A. It definitely is, and the reason I and many experts believe it is, it's not only because it looks different, it is because it behaves different, and now we know that it responds to treatment in a different way, so it can be easily separated from the main body of adenocarcinoma. So it's not only the way it looks, it's the way it behaves and the the way it responds.
Q. All right. Does it matter -- you've distinguished between, first of all, nonsmall cell and small cell. Does it matter to the oncologist what kind of cancer the patient has?
A. It surely does. Absolutely.
Q. Why?
A. Well, because the classification makes a huge difference -- difference in terms of how it behaves, what the prognosis of the patient is going to be and how it responds to treatment.
THE COURT: Just one second. Mr. Reilly, you have him blocked from the jury by these charts.
MR. REILLY: Sorry, Your Honor. We're going to be using some of the boards. Would you like me to set them up differently?

2097

THE COURT: As long as they can see him

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf Available from www.industrydocuments.ucsf.edu/docs/jmjl0001

while he testifies.

MR. REILLY: I'm sorry. I thought you couldn't see the jury. I'm sorry.

BY MR. REILLY:

Q. Doctor, can you give the jury a sense of, for example, what different kinds of treatments are given to patients who have small cell versus nonsmall cell, very briefly?

A. Well, the treatments vary in very minor components in terms of chemotherapy; however, the responsive treatment is incredibly different.

To give you an example, if you have a small cell carcinoma and you treat a patient with small cell cancer, the probability that that patient is going to improve is about 80 percent. Very, very good.

The probability that you may cure that patient is about 10 percent. It doesn't sound great to you, but 15 years ago we didn't cure anyone. So there is a cure probability in small cell cancer.

When you go to the nonsmall cell cancer, the run-of-the-mill squamous cell cancer, the run-of-the-mill, poorly-differentiated adenocarcinoma and the run-of-the-mill, large cell

carcinomas, the chemotherapy, the way it's given is slightly different; the response is very, very

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

different. The response rate is, at best, about 30 percent, 25 to 30 percent, and the probability of cure is close to zero, essentially. So the response is very, very different.

Now, when we consider BAC, bronchioalveolar carcinoma, it is even more different, because the response to chemotherapy, to routine, standard chemotherapy, is very, very low, much less than the 30 percent that I alluded to before, and the response to Iressa, which is a different type of treatment, is about 25 percent, which is much higher than in the other two varieties.

For example, in small cell carcinoma, the response rate is virtually zero.

Q. Doctor, can you tell the jury whether or not the different types of cancers look different under the microscope?

A. Yes, they look different, and that’s the basis for that classification that I’ve just drawn on the board.

Q. And we will get into that in just a minute.

2099

Clinically, do the different kinds of cancers act differently, as the patient has the disease?

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

A. Absolutely. If you take small cell cancers and you don't treat small cell cancer, or if you're in the 20 percent that does not respond, the average survival is between six to eight months, at best. In fact, many theories suggest that the average survival of those patients, depending on the presentation, is about three to four months. That's the natural history of the disease.

If you take nonsmall cell cancers as a group, and either you don't treat the patient or you treat the patient and the treatment doesn't work, the average survival is between -- generally between eight to nine, perhaps at best ten months.

If you take bronchioalveolar and you separate that and either you treat them unsuccessfully or you don't treat them, many of those patients live two, three years, so their survival is better.

The natural history of the disease is different, and that is very useful for us to apply or not to apply treatment and to counsel patients what to do, depending on their particular situation.

Q. Could you describe to the jury, and if it would be helpful to use one of these boards or the sketch pad, would you describe for the jury how regular adenocarcinoma versus BAC looks under the

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

microscope?
A. Well, I'm sorry I didn't bring a picture of regular adenocarcinoma, but essentially -- adenocarcinoma is a term that really has gradations. It's a potpourri of different appearances under the microscope.

If you take the poorly-differentiated, it's going to look quite a bit different than the very well-differentiated, which we're going to determine BAC.

Now, remember what I said about the natural anatomy of the lung? That's alveoli, the little holes, the actual rounded areas where the oxygen is exchanged. Well, if you remember, I said they were round and the cells were rounded, look like little grapes, and that's where the oxygen exchange takes place.

Well, as if you go to very well-differentiated ones, these tumors are going to have round areas and cells around it and areas like this that look like fingers with cells around it.

2101

If you go to the very poorly-differentiated, you're not going to have many holes; things are going to be very smudged. In essence, it's going to be solid. There are going to be very little holes with air in it. It's going to

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

be solid, from a solid pattern, to what we call a Swiss cheese pattern. Just think of Swiss cheese, many holes, versus regular American cheese, essentially solid.

And in the middle, what we call moderately differentiated, is a mixture between American cheese and Swiss cheese. So there's going to be some areas that are pretty solid and some areas that have holes in it. That's the spectrum.

Q. All right. Doctor, in patients, do you see a mixture of those cells?

A. Absolutely. If you take -- if you take enough sections of a specimen of cancer of the lung in the nonsmall cell category -- the small cell, most of them are relatively clear, but in a nonsmall cell, if you take enough sections, you're going to see a spectrum of changes. It's only a matter of taking enough sections. And in practicality, in every practice, we may take three or four sections.

If you want to do a study and do

2102

investigation, you may take 15 or 20 sections, but that's not the way that medicine is practiced.

Q. I'd like you to cover -- well, does that mean that you have two different kinds of cancer if you have a mixture of the cells, BAC and adenocarcinoma both, or what does that mean?

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Produced by www.industrydocuments.ucsf.edu/docs/jmjl0001

A. No. What it means is that there are different genetic mutations that drive the cell to do whatever the gene wants to do. The gene, that I talked about before, has a mission, and that gene tells the cell what to do, and in some cases, a gene is telling the cell, "Well, you're going to behave pretty well and look pretty much like normal lung." In other cases, the gene is going to tell the cell, "I want you to really go fast. I want you to invade. I want you to destroy, and I want you to grow." And it's all a matter of what the genes are telling the cell to do.

Q. Okay. Let me cover one more general topic, and then we'll move right into Mrs. Routh, or whatever the Judge wants to do.

I'd like you to briefly and simply, if you would, explain how it is that cells come -- go from being a normal cell to being a cancer cell. How does that happen?

2103

A. Well, what happens is that we get old, essentially. I'm going to tell you why it makes a difference.

MR. REILLY: Are we out of paper? There is another one over here, Doctor.

A. There's some more here.

Q. Why don't you tear those. I don't know

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

what those are.
MR. HUNTER: Judge, before the doctor gets started, I wonder if we could have the question read back. I don't recall.
BY MR. REILLY:
Q. How does the gene -- I'm sorry. How does a normal cell become a cancer cell?
MR. HUNTER: All right. Now, Judge, I would object to that question as open-ended, unless it's in the presence of an environmental carcinogen, like smoke or without --
THE COURT: Overruled, sir. You can cover that on cross.
A. Like I said before, all of the cells have a program, a computer program, which is the genetic make-up, and all of the cells are programmed to live for a certain time and then die. That's normal. Every cell is programmed to die.

2104

But, obviously, if the cells are programmed to die, you've got to have a mechanism to replace them in an orderly fashion. That happens every day in your body: Cells die and they're replaced in an orderly fashion.
To be replaced, you've got to copy the program. You can't throw away the computer with the program in there. You need to get the program and

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

replace it or copy it.

So every day, there are millions -- not millions -- billions of copies of your DNA. That's the gene that's made on an hourly basis, literally billions.

As we get older, the mechanism of copy begins to fail, and it fails more often. Those are, in essence, what we call mutations.

As you get mutations, some mutations will give you diabetes, some mutations will give you arthritis, and some mutations will give you cancer. As we get older, you can get more and more, and the older we live and we escape the ravages of diabetes and heart attacks, the more that cancer is going to become a prevalent disease, because that is the problem, that the copy system begins to fail.

Now, it can fail simply because of the

2105

copy system, or it can be actually made to fail by what we call environmental factors. One environmental factor is smoking. Another environmental factor is asbestos. Another environmental factor is radiation, from all sorts of sources. Another environmental factor that recently has become very important is viral factors. There's viruses all over.

However, you do not have to have

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

environmental factors. You can live in a germ-free environment, in a pollutant-free environment, and if you get old enough and you have the bad genes, you're going to get cancer. That's the way that cancer develops.

Q. You touched on environmental factors, like cigarette smoking. Does -- well, you've already testified in the case for Mr. Hunter, where you said cigarette smoke caused somebody's cancer; right?

A. There's no doubt about that, yes.

Q. All right. So, I take it you hold the belief that, or the opinion that smoking causes cancer?

A. That is correct.

Q. Including lung cancer?

A. That is correct.

2106

Q. Let me ask about secondhand smoke. Does secondhand smoke cause lung cancer?

A. I don't think there is scientific proof that that is the case. There is a lot of literature that shows association. Association is not causation. We're talking about two different things, and I'll be happy to explain that.

Q. Would you, please?

A. Okay. I think this is very important that we all understand.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

Association. Association is, if you were a fan of the western movies, do you remember that all of the good guys had white hats and all of the bad guys had black hats? That's an association, that the good guys had white hats, and being good was associated with white hats.

Now, there is no causation there, because a white hat doesn't make that guy a good guy. That would be causation. That would be an association between the white hat that causes that person to be a good guy. That doesn't happen, right? So that's simply association.

Or let's take the usual movie gangsters, they all drive black Cadillacs. That's an association, the gangster with a black Cadillac.

2107

Does that mean that the black Cadillac caused that person to be a gangster? No. So there is no causation.

I believe that there is definite causation between direct smoking, one, two, three packs a day, as a cause for cancer of the lung. I think the data is absolutely solid. There is no doubt about it.

However, I believe that the data with indirect smoking is association. I do not believe that scientifically that data implies causation.

Q. Doctor, is work occurring right now that

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

will ultimately answer that question?
MR. HUNTER: Judge, I object.
THE COURT: Come sidebar.
(Thereupon, the following proceedings were had at sidebar:)
THE COURT: The question, as I understand it, is there work going on now, meaning scientific research, to prove whether or not exposure to secondhand smoke will be shown to be a cause of lung cancer, as opposed to being simply an association.
MR. REILLY: That, and I'm not asking for a specific study.
THE COURT: I understand. What's wrong

2108

with the idea that there's work being done to determine that, other than you say it's already been done? Why can't he prove with this witness that it isn't done?
MR. HUNTER: First of all, it's irrelevant because it doesn't show the results of this study. It's all hearsay. For him to just say, "Well, there's some" --
THE COURT: He didn't say there are. He just said there's work being done. But if you're asking him --
MR. REILLY: And he's yet to comment on

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

it.

THE COURT: I know. This question, I think, is not defective, because he's not commenting on the work of other people, just whether or not work is being done.

MR. HUNTER: That's irrelevant. Why is that probative of anything? That the work may be helping me or him, it's not proving a fact or issue.

THE COURT: I think it does help him, because you're saying it's done, it's already proven, and they're saying: No, it's not.

MR. HUNTER: I'm saying it's getting

2109

stronger.

THE COURT: I understand you'll come in on cross.

MR. HUNTER: This is misleading the jury. It's not probative. It doesn't prove a fact in issue. It's hearsay. I can't cross examine.

THE COURT: Overruled. Wait. You're not going to be permitted to ask him what the work so far has shown.

MR. REILLY: I'm not.

THE COURT: No, if you're going to be asking him the results of studies because --

MR. REILLY: I'm not -- what he's going to

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

talk about is what kind of work is occurring and what the expected results one day will be.

THE COURT: No. That's speculation, if you're asking him what the expected results will be.

MR. REILLY: Not really, Your Honor, if you just --

THE COURT: It does or doesn't.

MR. REILLY: If you just wait and listen to his testimony, you will understand exactly. This is what experts talk about all of the time. They come in and say: Look, this is

2110

what we know, this is what we don't know, this is what we're working on, this is what it's geared to find out, and five years from now, the results of this gene assay are going to be the following: We will have mapped exactly where the genes light up, don't light up. Just wait. It doesn't rely on a single study.

THE COURT: It's not quite that simple. I agree with everything you've said up to the last question, which is what will we find when we get there, and I think that's an invitation for him to say, "We'll show there is no connection between exposure to secondhand smoke."

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

MR. REILLY: Judge --
THE COURT: That's speculation.
MR. REILLY: You have allowed his witness, Dr. Messino, to propose to this jury a complete theory, over my objection, you allowed their expert to say to this jury, "I have a theory that secondhand smoke works with her A1A defect, to cause her lung cancer."
Now, that is so far -- frankly, I think that's wrong, but that is so far from what my expert is just about to tell this jury on a

2111

general basis.
THE COURT: Regardless of the correctness of my ruling in allowing that testimony, I don't understand how you can have him speculate as to what the research currently going on will determine -- will end up proving. He can say what the issues are, he can say there is work being done, but he can't say what it's going to result in.
MR. REILLY: Maybe I'm overstating. I'm not -- he's not going to say this gene will prove to be this way and that gene will prove to be this way. But they have the human genome. This is not rocket science; this is now the next stage of the work.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

There's going to --
THE COURT: We're not talking about the same thing. I'm not arguing he can't say whether the research is being conducted.
MR. REILLY: I think I have given you the impression --
THE COURT: I'm saying I don't believe you can ask him to say what the results are going to be of the pending research.
MR. REILLY: All right.

2112

MR. HUNTER: Judge, could I just first -- well, I'll have to come back, but, I mean, I want to be very cautious on this point. I know where he is going. He's trying to leave this jury with the impression that the results of this cutting-edge research is going to be favorable to his case.
THE COURT: I just said he's not going to be able to ask this man to speculate, in fact, where it will end up.
MR. HUNTER: That's where I objected to the whole thing about ongoing research. He can describe what it is, but any inference he's going to try to lead this jury in --
THE COURT: I understand.
(Thereupon, the sidebar was concluded and

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Available from www.industrydocuments.ucsf.edu/docs/jmjl0001

the following proceedings were held in open court:)

THE COURT: Members of the jury, we're going to take a 15-minute break at this point. Please, don't discuss the case yourselves or let anyone talk to you about it.

(A brief recess was taken, after which the following proceedings were held:)

THE COURT: Are you ready to continue?

MR. REILLY: Yes, Your Honor.

THE COURT: Bring in the jury.

(The jury entered the courtroom.)

THE COURT: Have a seat. All right. Thank you. Please be seated.

Mr. Reilly.

MR. REILLY: Thank you, Your Honor.

BY MR. REILLY:

Q. Before we broke, I'd asked you -- maybe I can have that question read back.

(Off the record discussion.)

Q. I asked you, Doctor, whether, in your opinion, secondhand smoke caused lung cancer, and you answered that, and then I asked you whether or not there was work occurring right now which would ultimately answer that question, and your answer to that question?

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

A. Yes. I think there's a lot of research going on right now that will shed light on whether, indeed, there is only an association or there is actually causation; in other words, where there's only -- that they're tied together, or actually indirect smoke actually causes that cancer.

Q. And is the work that's going on that you're referring to work in the area of genetics?

2114

A. Yes, sir.

MR. HUNTER: I think we're going to have to have a sidebar on this.

(Thereupon, the following proceedings were had at sidebar:)

MR. HUNTER: Obviously, this is some sort of an excerpt from a text, and I don't think --

MR. REILLY: Let me resolve that. I'll black that out. I saw that just a moment ago myself, and I didn't intend --

THE COURT: You mean the two lines or three lines on the bottom?

MR. HUNTER: Yes, the two or three lines on the bottom.

THE COURT: All right. Anything besides that?

MR. HUNTER: Well, it's caught me by surprise. You know, why couldn't he just ask

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

the doctor: What are the genes that are affected and that are mutated by smoke?

THE COURT: Sir, are you telling me that the doctor will testify to each of the items there, that this is -- are you testifying -- pardon me. I'll start again.

Are you telling me the doctor will testify

2115

to each of these items on the chart?

MR. REILLY: Sure. But can he keep these all in his head.

THE COURT: No. That's my point. If it's obviously designed to aid his testimony and his testimony is going to cover those areas, what's wrong with it?

MR. HUNTER: But he shouldn't be handed the page. He can tell the jury. We don't need to have a blow-up and the jurors, that are taking notes, write down every gene, unless the doctor finds it's relevant.

THE COURT: I understand. Overruled.

(Thereupon, the sidebar was concluded and the following proceedings were held in open court:)

BY MR. REILLY:

Q. Doctor, would you come down for just a minute?

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf Available from www.industrydocuments.ucsf.edu/docs/jmjl0001

Doctor, can you tell the jury what is found on this board?

A. Yes. This is a list, not an all-inclusive list, but it is a list of certain genes that are activated -- that we know are activated in certain types of cancers. This is a list of certain genes

2116

that we know are inactivated in certain types of cancers.

And this is a list of growth factors that we know influence the ability of malignant cells to grow or to cease to grow.

Now, this is very important, because there is no -- there is knowledge that genetic factors have a lot to do with cancer of the lungs, and maybe I could give you a couple of numbers here.

MR. HUNTER: Judge, I think we need a question.

BY MR. REILLY:

Q. Doctor, can you --

THE COURT: Go ahead. You can complete your answer.

A. Let's assume that you smoke one, two, three packs a day. Smokers.

How many people that smoke one to three packs a day are going to develop cancer of the lung in their life span? Well, the percentages are

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

somewhat between 17 and 19 percent.

If you think about it, it's not a lot, but that equals about 180,000 cases a year, and in most of those cases, people die. So that is a tremendous impact on the nation.

2117

Worldwide, it's even a bigger number. But only 17 to 19 percent of people who have a very, very strong smoking history develop cancer.

Why? The reason is that you've got to have the right background in your genes to develop cancer.

And some people can smoke ten packs a day forever and never develop cancer. Why? Because they don't have the right combination of genes that allows whatever causes cancer in smoke to make those cells develop into a malignant cell. So there is no doubt that genetics are extremely important in who gets cancer and who doesn't get cancer.

BY MR. REILLY:

Q. And is this being investigated today? Is this the topic of research?

A. Oh, this is extremely important, and as I said, this is not all-inclusive, and we're going to get into some of the details of why this is not all-inclusive, but this is a very, very hot area of research, because the fact is, when you asked me

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf Provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

before, well, what turns genes on and off --
Q. Right.
A. -- the answer is, we don't know what turns genes on and off. Now, if we could turn these

2118

genes off, the promoters, these are called the promoters, off, and we can turn the suppressors on, what would happen? The tumor cells would die, or at least they would cease to grow. So this is where the answer is.

Turn the bad guys off; turn the good guys on. Then we can control the disease.

Q. Doctor, before you leave, let me just ask you a couple of questions about the research that's currently going on.

Is the research going on trying to identify which genes are turned on and which genes are turned off in different types of cancers?

A. Absolutely, yes. There are different patterns per type of cancer, of activation and deactivation, so this type of research that I alluded to before will tell us which ones are on, which ones are off.

But more than that, and I didn't say that, but there is also another area called proteomics, in which we actually know what kinds of proteins these genes are coding for.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Available from www.industrydocuments.ucsf.edu/docs/jmjl0001

Q. Coding, you said coding for?
A. Coding.
Q. What does that mean?

2119

A. What that means is how does a gene work? Well, a gene works by telling the cell to make a protein.

Okay. If you have a bad gene in your pancreas, you don't make enough insulin, you have diabetes. Well, that gene is telling the body to make insulin, so the gene is nothing but the chief, the boss; it tells the cell what to do.

So we're going to know what these genes are telling the cell to do, and we're going to know what these genes are telling the cell: "Hey, we do it routinely, but now we can't do it," because that's what's happening; these genes cannot work.

Once we know the balance, perhaps we can interfere with the mechanism of those cells to survive, and we're already doing that. Iressa is actually doing that. Iressa interferes with the growth factors.

So we're going to engineer treatment to modify these problems here.

Q. I'd like you to -- I want to talk about two things, because you brought up Iressa right now.

When we first talked about or asked you

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

about it -- not talked to you about it -- first, I asked you about is research going on, trying to

2120

identify which genes are turned on and which genes are turned off in smokers --

A. That is correct.

Q. -- and when you said a bit ago that we're going to do research to figure out whether or not secondhand smoke causes lung cancer, what were you talking about?

A. What I was talking about is -- maybe I can do it -- of the 180,000 cases of cancer of the lung that are projected for this year, the literature in indirect smoking tells us --

MR. HUNTER: Judge, now I object.

THE COURT: Sir, don't refer to specific texts or --

BY MR. REILLY:

Q. Please, just talk about the data. Don't talk about literature.

A. The data.

MR. HUNTER: Now, Judge, I object.

THE COURT: Come to sidebar.

(Thereupon, the following proceedings were had at sidebar:)

THE COURT: You're being admonished, don't make gestures in front of the jury, to show

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

your personal belief on what's going on. It's
2121
inappropriate. You both know it. You've been around a very long time doing this. That goes for both of you.

Now, here's my dilemma. This man is going to be talking about what ongoing research has shown that he uses, that he knows, that he wants to say. But he's not allowed to use texts --

MR. REILLY: Right.

THE COURT: -- or other expert sources to bolster his conclusions.

MR. REILLY: Right.

THE COURT: So let him give his conclusions. That's it. Don't say why he's reached these conclusions, based on other texts or other experts.

MR. REILLY: Judge, I want to do this right, okay? I don't want to run afoul.

THE COURT: We all agree.

MR. REILLY: Right. His whole concept here is to simply explain what the research is that's going on today. He used the word --

THE COURT: Here's what you're doing here, as I see it. You have a man here who is now an expert in the area, and he wants to simply tell

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

2122
the jury how the research is going; that is, what areas they're into and what conclusions they hope to reach.

The normal expert simply gives his opinion and the bases for it and what he did to reach that opinion. You're using him beyond that, and I think that's -- we're getting to the point where I'm not going to permit it.

He's allowed to give his opinions and say what he did to reach those opinions, but now he's surveying the literature, he's surveying the state of discovery that's going on.

MR. REILLY: No, Judge.

THE COURT: That's wrong.

MR. REILLY: No. His opinion is that secondhand smoke has not been shown to cause lung cancer.

THE COURT: He said that -- he didn't say that. He said it's been associated but not a cause.

MR. REILLY: Correct. That's exactly -- right. Now he's explaining why he arrived at that conclusion.

THE COURT: But he's far past that. He's now saying what they're looking for in the

2123

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

research.
MR. REILLY: In fact, because what he's going to tell you is --
THE COURT: Why does that matter to this jury, what they're looking for?
MR. REILLY: Because it provides the basis for his opinion, which he's supposed to give, why does he feel there's only an association and it's not been proven, because this is the kind of result that --
THE COURT: Give the conclusions, then, not the basis for them --
MR. REILLY: Judge, do you know what?
THE COURT: -- of other people's research.
MR. REILLY: It's always other people's research. That's what experts --
THE COURT: But he isn't going to use their testing, their names or --
MR. REILLY: No, no.
THE COURT: -- their recommendations or --
MR. REILLY: You're exactly right.
THE COURT: -- their articles in peer-reviewed journals, none of those --
MR. REILLY: I agree with you completely.
THE COURT: That's what he started to say now.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

MR. REILLY: I appreciate that. That's what I said, "Use another word." I don't want him to talk about the literature.

THE COURT: I still have this ongoing concern that he's now going to survey, just about the way the Surgeon General's Report would be, he's giving a current review of what's going on out there. I'm not so sure that that's necessary for his opinions. His opinions are: They don't know yet; they're looking into it.

MR. REILLY: Judge, every expert has to give -- I mean, I can't even -- I mean, I realize that you can do it in reverse order, which I basically have done, which is ask him the opinion and provide the basis for it.

THE COURT: Sure. Most people do.

MR. REILLY: All I'm doing is providing the basis for why he hasn't come to the conclusion yet whether or not secondhand smoke really causes it or not.

THE COURT: You're going a little further than that, in my opinion.

MR. REILLY: Not really. If you just --

2125

MR. HUNTER: The objection was to the word "data."

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

THE COURT: I know. He's agreed that the objection was proper.

MR. REILLY: The objection is to the word "literature." I agree, he shouldn't have said the word "literature." This is what lawyers argue about, not witnesses.

MR. HUNTER: We came here over the objection of the word "data." He changed the word "literature" and said "data."

MR. REILLY: I said the word "data."

THE COURT: Right.

MR. REILLY: He gets to talk about the data.

THE COURT: No, he doesn't.

MR. REILLY: The data provides -- sure. The data is what people draw their conclusions from. Judge, you have to be able to talk about the data.

THE COURT: Cut the baby at this point. He's entitled to say there is work being done now; that the question is still uncertain in his mind, that they have not scientifically proven that environmental smoke causes lung

2126

cancer and that they're still working on it, but he isn't entitled to say now the details of the one side of it; that this will tend to

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

prove that it’s caused only by your predisposition, caused by genetics.

MR. REILLY: See, everybody thinks --

THE COURT: Everybody, he already said that.

MR. REILLY: You’re drawing a conclusion.

THE COURT: I heard him say the gene is determined by whether cancer will grow.

MR. REILLY: Judge, what he’s going to tell you, one of these days, when they line up all of the genes that occur in smokers so they can see what it is, how the genes turn on in smokers and how the genes turn off in smokers, then they’re going to look at other folks, and they’re going to say: By golly, secondhand smoke really does it or secondhand smoke doesn’t do it. He is not going to say --

THE COURT: He said that. He said it’s uncertain at this point; it is an association with it, but there is no definitive proof that it causes.

MR. REILLY: If you think he’s already

2127

said it, then let me get him to say it now.

MR. HUNTER: No. You can’t say it again. It’s repetitive.

THE COURT: Smoking causes lung cancer.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

Secondhand smoke has an association with lung cancer, but no specific proof it does.

MR. REILLY: Right.

THE COURT: That's what he said.

MR. REILLY: All he's going to say is: Look, we're doing research today that is designed to identify which genes are turned on and which genes turns off.

THE COURT: Great. He's gone much further. If you keep him to that, it's acceptable.

MR. REILLY: Okay.

(Thereupon, the sidebar was concluded and the following proceedings were held in open court:)

BY MR. REILLY:

Q. Doctor, you've explained that research is going on right now regarding which genes are turned on and off in smokers; correct?

A. Yes, sir.

Q. Is that research complete?

2128

A. No.

Q. Ongoing?

A. Absolutely.

Q. Once that research is complete, will it be possible to test people to determine whether or not

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

their lung cancer was the result of the same genes that are turned on and off in smokers, or not?

MR. HUNTER: Objection, speculative.

THE COURT: Sustained. Sustained.

BY MR. REILLY:

Q. Is that the purpose of the study to determine whether or not specific genes are turned on and off in smokers?

A. That is correct. That is the purpose of the study. That has already been done, actually, and there's information about that.

Q. And you said you believe there is an association between secondhand smoke and certain kinds of lung cancer; right?

A. That association is shown by statistical methods, that is correct, yes.

Q. All right. Please, explain to the jury what you mean by "is shown by" -- let me back up.

Has it been shown by pneumatic methods?

A. No.

2129

Q. No, sir. Explain to the jury what you mean by it's been shown by statistical methods?

A. There will be 180,000 cases of lung cancer this year in the states. Approximately 3,000, we are told, is the effect of secondary smoke.

Out of the 180,000, 3,000 other people --

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf Supported by www.industrydocuments.ucsf.edu/docs/jmjl0001

say, two to 4,000 -- we're going to take the average, 3,000.

Okay. How do we know that the 3,000 are caused by indirect smoke? How do the statisticians put the data together?

We don't have a good animal model. In many diseases, we have good animal models that will give us a lot of information. We do not have a good animal model for this particular problem.

So the statisticians take histories. They give you a piece of paper, and "Have you ever smoked? Did your husband or your wife smoke? How many years were you exposed to smoking?"

So let's talk about household -- and actually, it's the same thing for the workplace. These are all nonsmokers. And then there's a history.

And what you try to find out is how many of these nonsmokers develop cancer, and then you

2130

compare the ones that develop cancer in terms of their history of exposure: Did they have someone in the house? Did they have people in the workplace that smoked?

And they take a history as to how long they were exposed, how many cigarettes a day did the husband or the wife smoke.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

Then they try to balance -- this is very important -- they try to balance, by statistical methods, to exclude what we call confounding factors.

Now, what are confounding factors? Well, extremely important. One obvious one, but hopefully people don't do, is to tell a lie. Hopefully everyone that says he's a nonsmoker is a nonsmoker and never smoked. We hope they are truthful about that. That would be a confounding factor, where they're not telling the truth.

Another confounding factor is they don't really know how many cigarettes or how many packs a day the husband or wife smoke, but they're giving you an approximation.

But the most important confounding factor that you cannot measure is other causes of cancer. What are these confounding factors that you cannot

measure? Genes, viruses, radon, other sources of radiation, asbestos.

It's very difficult to measure those other confounding factors, particularly when you're taking a history by phone or you're taking a history by mail.

So, if you cannot rule this out because there is no laboratory test, or there wasn't until

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf Available from www.industrydocuments.ucsf.edu/docs/jmjl0001

very recently, then whatever number of cancers that you detect in a nonsmoker, you're going to say that it is due to indirect smoking, because you have no other culprit. You can't blame anything else, because you don't have that data.

What I am saying is that as we become more sophisticated, those 3,000 cases may actually have an explanation. I'm not saying the 3,000 are going to have an explanation, but let us assume that five, ten, 15 percent have an explanation other than indirect smoke, that as we know more and as our genetic data matures on viruses or something else, let us assume on the 3,000 cases, 5, 10, 15 percent have another explanation, what is going to happen to the statistics that show association? Well, this is -- I'm going to try to explain to you how the statistics work.

2132

MR. HUNTER: Judge, I would object to this. There is no way I can interpose objections to this. He's getting into what then will occur in the future, if 15 percent or 10 percent are found --

THE COURT: Overruled.

A. Statistics are drawing numbers.

The key is a risk, and we give it a number. The risk of someone who is not a smoker

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

over someone who is exposed to smoking secondhand, that's what we're talking about.

Now, I want you to compare to the risk in smokers. The risk in real smokers, firsthand smoke, direct smoke, whatever, is 30 to 40 times than nonsmokers. In other words, if you smoke, have a pack a day, a pack, two, three, it goes up, the risk goes up, but it goes up to 30 to 40 times. It is enormous. You cannot ignore that number. It's a whopper of a number.

The risk in the nonsmoker versus secondary smokers varies, one, two, three, less than one, because some studies are negative. So if you're going to decrease that number, that risk factor is also going to decrease. Making the association is very, very weak. The fact is, if the data is not

2133

in, we do not know what's going to happen.

What I'm telling you is that when the data is in, all these numbers may change because the association is so small.

This 30 to 40 times will never change. There is no way that that's going to change.

This risk factor is so small that it may -- may get better; it may get worse. It's very weak.

Q. Doctor, has BAC ever been associated with

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

secondhand smoke?
A. No, sir. It's actually been negatively associated.
Q. Doctor, I'd like to talk to you about your work in connection with this case, Mrs. Routh.
Were you first contacted in this case about January of 2002?
A. Or December of 2001.
Q. Okay. And I think you indicated your normal course is to review the slides, the pathology slides blindly; correct?
A. That is correct.
Q. Did you do that in this case?
A. Yes, sir.
Q. And let's go through what you did and then

2134

we'll show the jury the results of your investigation.
Can you tell the jury what you did after you reviewed the slides in this case?
A. Then I reviewed the clinical data, how the diagnosis was made, and after the diagnosis, how the patient was treated.
Q. And then did you read ultimately depositions that were taken from Mrs. Routh and Dr. Roggli and Dr. Barsky?
A. That's correct.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

Q. When you looked at the pathology, did you look at all the available pathology as of 2002 or 2001?
A. Well, I know I looked at all of the slides that were provided. I do not remember the sequence in which they were provided to me.
Q. Do you know of any slides you weren't shown that were available as of 2002?
A. No.
Q. All right. You were shown slides from both Mission St. Joseph Hospital and from the North Carolina -- North Carolina Memorial Hospital?
A. I was shown the slides from the actual surgery and then the recurrence, that is correct.

2135

Q. Well, the North Carolina slides were from the review by Dr. Hartz; correct?
A. Yes.
Q. And then later were you provided with the slides that were prepared by Dr. -- I have forgotten her name; I'm having a senior moment -- Ibrahim, thank you, from Mission St. Joseph after the recurrence?
A. That's correct.
Q. Did you reach a conclusion as to what kind of, under the microscope, what kind of lung cancer Mrs. Routh has?

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

A. My diagnosis was adenocarcinoma, with a predominant bronchioalveolar pattern.
Q. Okay. In plain terms, is that BAC?
A. That is correct.
Q. You reviewed her clinical course; correct?
A. That is correct.
Q. And we will get into it in detail, but was that consistent with BAC?
A. Absolutely.
Q. Doctor, have you come to a conclusion as to whether or not, based upon a reasonable degree of medical probability, Mrs. Routh's lung cancer was caused by her exposure to secondhand smoke as a

2136

flight attendant?
A. I think it is highly unlikely that that is the case.
Q. Do you have reasons for your opinion?
A. Yes, I have.
Q. Can you tell the jury what -- would you put on the board what your reasons are for that?
A. The first reason is the age at the time of diagnosis, which was 48.
Q. She might not have been diagnosed until 49, but you've seen --
A. The tumor was there on the chest X-ray, age 48. 48, 49, it really doesn't matter for my

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

explanation.
If you look at the incidence -- I'll show you here. This is age and this is the number of cancer-of-the-lung cases.
Q. Doctor, let me give you a better marker.
MR. REILLY: Can everybody see this?
Would you like it moved up?
THE JURY PANEL: (No response.)
A. The vast majority of cancers of the lung are diagnosed in the ten years of 50 to 60 to 70. In fact, between 60 and 70, there's a huge jump in the incidence. Less than 5 percent -- less than 5

2137

percent of cases are diagnosed before the age of 50. Very unusual to have cancer of the lung before the age of 50.
Now, why is that important? Well, it's important for two reasons.
We know that the majority of the diseases of cancers that are associated with genetic defects present early in life. So this is very consistent with a genetic defect in this lady.
Second is exposure. We all accept that direct tobacco smoke is a cancer-producing agent, particularly in the lung.
But we all know that the more you smoke and the longer you smoke, the higher the probability

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

that you're going to have cancer of the lung. Well, when you smoke for a long time, your chances of developing cancer of the lung barely begin to rise before age 50. And there's really a huge number between 60 and 75 -- actually, more than half between 60 and 75.

So, this young lady had some exposure in her life, in her job. That exposure, we can all differ on what it was and what the quantitation is, but we have to assume it was certainly less than if she was a smoker, a direct smoker.

2138

So it would be highly unlikely that if she was exposed to a minimal amount, compared to a direct smoker, she would have a cancer at this age. You would expect it to be at an older age.

So I think age at diagnosis: unusual and more suggestive of a genetic predisposition.

Number two, the type of cancer.

My opinion is that this is another carcinoma of bronchioalveolar features. How common is that? Well, it varies because the criteria to diagnose BAC have changed over time, and it varies.

But a reasonable number would be between 3 and 8 percent of cases. Certainly not the regular, common, run-of-the-mill disease.

So the type of cancer, unusual; the age of

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

presentation, very unusual.

Number three, the clinical behavior.

What do I mean by that? Well, pathologists -- pathology is not an exact science, so pathologists may differ in classification of adenocarcinoma based on looking through the microscope.

Where is the proof? Where is -- how can we test the diagnosis by the pathologist? Well, we can test the diagnosis because we're predicting

2139

behavior, and if the behavior is in accordance -- is in agreement with your diagnosis, you're right. Unfortunately, it takes years to test that. But in this particular case, we have that advantage because we can look backwards.

When I was shown this case, I predicted this was a BAC. Adenocarcinoma, BAC features. And I predicted that this lady would have a fairly good prognosis, meaning she's going to live a certain number of years, not months.

And I predicted a certain response to therapy, and that will be my next point, but the clinical behavior that I predicted was years, not months.

In retrospect, I was right. It's been five years, and fortunately, this young lady is

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

alive.

In the regular cancer of the lung, regular cancer of the lung associated with adenocarcinoma, squamous cell carcinoma, associated with smokers, how many patients live for five years? Five percent. The vast majority of patients are dead within the first two years. Five percent survive to five years.

So, once again, this lady is not the

2140

regular cancer of the lung. Thank God. Good for her.

Number 4, is there anything else unusual about this lady? Of course. She's a nonsmoker. That in itself is unusual. Why? Majority of cancers of the lung are in people who smoke.

Number 5, response to therapy.

In the regular cancer of the lung, chemotherapy, like I said before, improves about 30 to 35 percent of cases.

She gets chemotherapy, she gets radiation therapy, and she goes on for three years. That's not the usual.

Usually those people die by 16 or 18 months. She goes on for three years.

And then she has a recurrence at three years. Very unusual.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

But even more unusual, she has a complete response to Iressa. How many cancers of the lung respond to Iressa? 25 percent.

And even more interesting, most of those responses are in people who do not smoke and in people with BAC morphology, where the cancer looks like BAC.

Certainly, this separates this lady from

2141

the vast, vast majority of cancers of the lung.

And, finally, the pattern of spread.

How does cancer of the lung, routine cancer of the lung kill people? It kills people because it travels. That's metastasis. It goes to the brain, it goes to the liver, it goes to the bone.

It kills you because it is able to get out of the lung, go to all these places and kill you. That's the routine mode of death.

What happened to this patient? In never got out of the chest. She recurred in the lung. At multiple sites, but it never went to the bones, thank God, it never went to the brain. Never went anywhere else.

That is typical behavior of BAC. You can call it well-differentiated adenocarcinoma; you can call it anything you want.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

The pattern of behavior is typical of a very select number of patients and a very select number of cancers.

So for all those reasons, this lady is in a different category. And this category has never been shown to be related to indirect smoking. In fact, it really has never been shown to be related

2142

to direct smoking, to actual smokers.

That's why I believe that this lady is in another category.

Q. Doctor, let's break these down one at a time, if you don't mind.

Let's go back. You talked about her age, and you've explained that folks at that age really don't get lung cancer, except you said less than 5 percent?

A. Folks at that page don't get any cancer. It's very unusual.

The way that the cancer is distributed is there is a big peak in the first ten years of life, and the vast majority of those are genetically driven. Then we get a by, we get a break, until we get to be 50, 55, and then there's a huge jump, which continues unabated.

Q. Doctor, you learned that her exposure to secondhand smoke came about as a result of being a

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

flight attendant; correct?
A. That's correct.
Q. Did that play any role in your conclusion that her secondhand smoke exposure didn't cause her lung cancer?
A. Absolutely.

2143

Q. Would you explain that to the jury? Don't make any reference to specific articles or literature.
A. There is no information that supports the notion that --
MR. HUNTER: Judge, I object.
A. -- that flight attendants --
THE COURT: Sustained. Move to be stricken.
Members of the jury, disregard.
BY MR. REILLY:
Q. Just explain what your opinion is in connection with flight attendants and their exposure to secondhand smoke.
A. It has never been shown --
MR. HUNTER: Judge, I object again.
THE COURT: Overruled.
A. It has never been shown that flight attendants have more cancer of the lung than the general population.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

BY MR. REILLY:
Q. What would you expect the result -- what would you expect their ratio of lung cancer for flight attendants to be, nonsmoking flight attendants, or flight attendants in general, if

2144

their exposure to secondhand smoke actually caused them to develop lung cancer?

MR. HUNTER: Objection. May we approach the bench?

THE COURT: Yes.

(Thereupon, the following proceedings were had at sidebar:)

THE COURT: The form of the question needs to be restated, in any event. First, you asked for nonsmoking, then you asked general.

MR. REILLY: I would be happy to restate it.

THE COURT: I understand that, but that's not the basis for his objection.

MR. HUNTER: He gave his opinion that flight attendants that -- that positions of flight attendants --

THE COURT: No. He said flight attendants don't have a higher incidence of lung cancer than anyone else.

MR. HUNTER: Now, why shouldn't it have

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

ended there?
MR. REILLY: Because that's a foundation for his conclusions.
THE COURT: Where are you going?

2145

MR. REILLY: What's the answer to this question? What would you expect to be if flight attendants got lung cancer to their exposure? His answer is going to be, just like Dr. Messino, I would expect them to get lung cancer more often than the general public.
THE COURT: Right.
MR. REILLY: That's it.
MR. HUNTER: That calls for speculation.
THE COURT: No, it doesn't. No, it doesn't, given his experience. No.
MR. HUNTER: Judge, wait. Let me -- let me phrase my objection a little better. He has to formulate the question to say what would you -- what would you --
THE COURT: If there was a connection --
MR. HUNTER: The studies --
THE COURT: -- if there was a connection between exposure to secondhand smoke and lung cancer, would you expect, then, that flight attendants who are regularly exposed to it would have a higher incidence.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

MR. HUNTER: Well, that assumes --
THE COURT: Just another way of saying it.
MR. HUNTER: That assumes it's been

2146

tested. But, see, we're getting into it through the back door.
THE COURT: No, there is already evidence in this case; there's cross examination of one or more of your experts on studies that have, in fact, shown that, so there is a basis for that.
MR. HUNTER: But that's --
THE COURT: It doesn't mean it's connected.
MR. HUNTER: That's not substantive evidence. That evidence can only be considered by the jury by way of impeachment.
THE COURT: I'm going to allow him to express the opinion, carefully phrased, that he would expect if there was this connection, it would be a higher amount.
(Thereupon, the sidebar was concluded and the following proceedings were held in open court:)

BY MR. REILLY:

Q. Doctor, what would you expect the experience of flight attendants to be in terms of

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

contracting lung cancer, if, in fact, their exposure on board airplanes caused them to get lung cancer?

2147

A. I'm sorry. I don't understand your question.

Q. Let me ask it again.

A minute ago, you explained --

MR. HUNTER: Judge, I object. He's now recapping. He should ask a direct question.

THE COURT: Just ask him questions.

BY MR. REILLY:

Q. Doctor, the incidence of lung cancer among flight attendants, what would you expect it to be, if, in fact, their exposure to secondhand smoke on board airplanes caused them to get lung cancer?

A. Higher than the general population.

Q. Doctor, you talked about her age, indicating a genetic explanation for --

A. I would like to say something else about that. I would say higher than the general population of nonsmokers.

Q. All right.

A. Okay. I just want to correct myself.

Q. Doctor, you talked about genetics in Mrs. Routh's age. Does Mrs. Routh have a genetic defect?

A. Yes, she does.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf Available from www.industrydocuments.ucsf.edu/docs/jmjl0001

Q. What is that genetic defect?

2148

A. She has something called Alpha-1 antitrypsin deficiency.

Q. In your opinion, would her Alpha-1 antitrypsin gene defect have played a role in her lung cancer?

MR. HUNTER: Judge, I object.

THE COURT: Overruled.

MR. HUNTER: Judge, may I approach the bench? This is a pretty critical issue.

(Thereupon, the following proceedings were had at sidebar:)

THE COURT: The question was, I'm reading from the computer screen here: "In your opinion, would her Alpha-1 antitrypsin gene deficiency have played a role in her lung cancer?"

"Answer: Yes."

What's wrong with that?

MR. HUNTER: Because I asked him -- the question is -- this is the Frye analysis. I asked him the question, based on the Yang study, which is --

THE COURT: You asked him in deposition or at trial?

MR. HUNTER: Yes. The only preliminary

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

2149
study which has been done, which was the Yang study, which my expert was cross examined on, I said, "Based on the findings from that study, do you have an opinion within a reasonable degree of medical probability whether the Alpha-1 antitrypsin deficiency has contributed to her lung cancer?"

And he says, "I do not have an opinion within a reasonable degree of medical probability."

Now, the fact that he just asked the question "may," I object to it because whether it may or not, the test is --

THE COURT: His question was, "In your opinion, would her Alpha-1 antitrypsin gene deficiency have played a role." "Would," not "may." That's what it says on the screen. That's what I thought I heard.

MR. HUNTER: Let me take a look at the question. I thought I heard the word "may."

It said "would."

THE COURT: It said "would."

MR. HUNTER: Can I come up?

THE COURT: Sure.

MR. HUNTER: Your Honor, I would like to

2150

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Available from www.industrydocuments.ucsf.edu/docs/jmjl0001

have an opportunity to voir dire on this point.
THE COURT: No. You can cover it on cross. You can cover it on cross.
MR. HUNTER: Judge, this is a threshold issue. This is a Frye issue. It's experimental science. It's never been proven. He accepts it's not been proven. He gave me an opinion, he does not have an opinion within reasonable medical probability whether it has played a role.
THE COURT: Do you have, do you agree that he said in deposition he doesn't have an opinion within reasonable medical probability?
MR. REILLY: He's going to say the same thing today.
THE COURT: Your response is that his answers to questions today are no different than his answers in deposition?
MR. REILLY: No, but I don't agree that that's what he said.
THE COURT: Do you have a copy of his deposition?
MR. HUNTER: Oh, yes, I have it.
MR. REILLY: But let me -- before you go get a copy of his deposition, what difference

2151

does it make? Even if it were widely varied

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

from what he said in his deposition, that's for cross.

THE COURT: No, but what he's saying -- I happen to agree, that's the way it goes --

MR. REILLY: I'm going to tell you, the next thing he's saying, this is wild speculation, his own expert had already said it, so how can it be the basis of a Frye motion from him?

THE COURT: Because he says on deposition, the man said there is no scientific evidence --

MR. REILLY: Oh, no, no. No way did he say that.

MR. HUNTER: I said, "Do you have an opinion as to whether the information that you've reviewed on Alpha-1 antitrypsin deficiency in this patient played a role in her lung cancer within a reasonable degree of medical probability?"

He says, "No." He said, "It's interesting, it's suggestive, but I can't give you an opinion within a reasonable degree of medical probability."

MR. REILLY: That's his opinion, to a

2152

reasonable degree of medical probability, it may have played a role. Can he prove it? No.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

Can he establish it?
In addition to that, there is new science since he took his deposition.
MR. HUNTER: I'd like to inquire.
THE COURT: Have you changed his opinions in your expert opinion statement?
MR. REILLY: Not only am I not obligated to do that, but his opinion remains the same. So this is just a bunch of -- you know, Your Honor, he's already had a witness take the stand and say that exactly -- when his witness testified, it was different from what he said in his deposition, too. It's silly. People change -- vary slightly their opinions, but this is virtually --
THE COURT: You're referring to the Florida rule, which is, you're not obligated to update opinions or changes, as opposed to federal?
MR. REILLY: Absolutely.
THE COURT: All right.
MR. REILLY: The fact of the matter is, Your Honor, his opinion hasn't changed an --

2153

THE COURT: All right. The question was, "Would the existence of the Alpha-1 antitrypsin deficiency have played a role?" And his answer

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

was, "Yes." All right.
MR. HUNTER: Here is where I asked the question.
THE COURT: Let me see it.
MR. HUNTER: Up here (indicating).
THE COURT: It's on Page 83 of the deposition taken March the 7th, 2003.
The question begins on the bottom of 82: "Would you agree with me, based on the study, that's the Yang study, in light of its size that you couldn't form an opinion within a reasonable degree of medical probably that heterozygote asymptomatic nonsmokers are more susceptible to lung cancer than if they didn't have the deficiency?"
The answer to that is: "I do not think the data is definitive. I think it's suggestive that that's the case, but it's not definitive."
MR. REILLY: All right. There you go.
THE COURT: The next question: "But does that mean that you couldn't give the opinion

2154

within a reasonable degree of medical certainty, not probability, that in a nonsmoker, asymptomatic, heterozygous individual, that you can't give the opinion

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

that they are more prone to cancer of the lung?"

"Answer: I don't think I can give you an opinion in terms 'more likely than not.'"

He corrected the "certainty."

MR. HUNTER: Now he's trying --

MR. ENGRAM: Now he made the objection to the form of the question.

THE COURT: Overruled.

(Thereupon, the sidebar was concluded and the following proceedings were held in open court:)

BY MR. REILLY:

Q. Let me just restate or say it again.

Doctor, in your opinion, would her Alpha-1 antitrypsin gene defect have played a role in her lung cancer?

A. The answer is yes, it could have played a role.

MR. HUNTER: See, Judge, that's what I object to.

2155

MR. REILLY: What's the basis --

THE COURT: I'm going to strike the question and "could have." Members of the jury, disregard that answer.

MR. REILLY: Your Honor, may we have a

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

sidebar?
THE COURT: No. Come sidebar without the reporter.
(Thereupon, there was a sidebar without the court reporter, after which the following proceedings were had in open court:)
BY MR. REILLY:
Q. Doctor, in your opinion, more likely than not, did Mrs. Routh's Alpha-1 antitrypsin gene defect play a role in the development of her lung cancer?
A. Yes.
Q. Why do you say that?
A. Again, you've got to go back to the age of the patient, and I believe that the age is quite consistent and compatible and very compelling, that genetic factors are a very important etiologic, that means causative factor, in the lung cancer of this young lady, yes.
So, here we have a genetic deficiency that

2156

has definitely -- that has been shown in the past to be associated with, for example, cancers of the liver, what we call hepatomas.
Q. Would you take just a minute, I hate to take you away from your answer, but could you explain that to the jury?

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

A. Well, here is a genetic change that has a history. It has been shown to be related to malignancies of the liver, and there is information that shows that it may very well be related to malignancies of the lung. Again, these are associations.

But you have to take them into account, Because, like I finished saying to you, the other data, the data related to indirect smoking, is also, in my opinion, an association, so you've got to give all this information a certain weight in your mind: How do I make decisions and how do I examine, what I say, for example, the information I'm giving you here?

Well, my knowledge, my experience and even though I'm not supposed to talk about it, my education.

Q. Okay. You can talk about your education, Doctor.

2157

A. Part of my education is reading. So you've got to put all of that together, and I give you my best answer and my best honest answer, and I believe that the gene defect in this lady is certainly very likely to be related to this very early onset of cancer of the lung.

Q. Are you familiar with her family history

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

of Alpha-1 antitrypsin gene defect?
A. Yes, I am.
Q. Her mother had the condition?
A. Yes.
Q. And her two sisters have the condition?
A. That is correct.
Q. Does her cousin have the condition?
A. That is correct.
Q. Is that a strong family history of Alpha-1 antitrypsin history?
A. Well, that's the expected history for carriers. This is what we call a penetrated abnormality, meaning that many members of the family are going to get it, so that is the classical.
Q. How long has it been known that Alpha-1 antitrypsin is connected to or causative of a liver cancer, did you say, or kidney cancer?
A. Liver.

2158

Q. Liver cancer.
A. That has been an observation that has been known for many, many years. Patients with Alpha-1 antitrypsin develop cirrhosis, and they also develop cancers of the liver.
Q. Did Mrs. Routh have other genetic defects?
A. She could have, but I don't know that.
Q. Is it possible to have tested her for

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

that?
A. Yes.
Q. Has such testing been done?
A. No, sir.
Q. Is a genetic defect, all by itself, sufficient explanation for a person to develop lung cancer?
A. Absolutely. You do not have to invoke environmental factors.
Q. In your opinion, was there some external force, some outside force, some environmental factor that caused her lung cancer?
A. We don't know the answer to that, because you cannot rule that out. You cannot rule the negative out. A fact of science.
Q. You can't prove a negative?
A. That's correct.

2159

Q. Okay. Doctor, assume for me that another physician has come and testified that her Alpha-1 antitrypsin gene deficiency may have made her more susceptible to oxygen radicals in connection with developing her lung cancer. What are oxygen radicals?
A. They're electrically charged oxygen particles. Again, oxygen is in conjunction with other atoms, so that it is electrically neutral.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

When you have a radical, it is electrically charged.

Q. Are flight attendants, because of their occupation, subjected to an external force that makes them susceptible to the development of oxygen radicals?

A. Yes, they are.

Q. What is that?

A. Higher energy gamma rays and protons and neutrons in the atmosphere.

Q. Is that the result of them flying at high altitude?

A. That is correct. There's less filtering of the high energy gamma rays and protons and neutrons. When they hit oxygens and oxygen-containing molecules, you're going to produce

2160

free radicals.

Q. Is that also called cosmic radiation?

A. Cosmic radiation is the general concept, that is correct.

Q. Does that have anything to do with secondhand smoke? Does secondhand smoke cause cosmic radiation?

A. No, sir.

Q. Doctor, you talked about this appearing under the microscope. Another one of your reasons

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf Supported by www.industrydocuments.ucsf.edu/docs/jmjl0001

was because this, under the microscope, appears to be BAC; correct?

A. That's correct.

Q. We've got some slides, and I'd like you to come down, if you would.

Have you made some photomicrographs of Mrs. Routh's pathology slides?

A. Yes, I did.

Q. Okay. I have a number of them here.

And I'd ask you, if you could, just however you think it's appropriate, just take these slides and show them to the jury and explain to them how they demonstrate what you've described as BAC?

A. Do we have one of the normal ones?

Q. Yes. I had to remark it. It had a legend

2161

at the bottom, and we had to remark it.

A. Can I show the first one first, the normal one?

MR. REILLY: While they do that, Judge, would it be appropriate to take like a five-minute break?

THE COURT: Yes.

Members of the jury, we're going to take a five-minute break at this point. Remember not to discuss the case among yourselves.

(A brief recess was taken, after which the

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

following proceedings were held:)

THE COURT: How much longer will you be on direct?

MR. REILLY: Your Honor, I believe I will be done either at or before noon.

(The jury entered the courtroom.)

THE COURT: Mr. Reilly.

MR. REILLY: Yes, Your Honor.

BY MR. REILLY:

Q. Doctor, perhaps it would be best if you started by demonstrating to the jury what normal lung tissue looks like under the microscope.

A. I can use this one.

Okay. In order to show you normal lung,

2162

I'm going to ask you to ignore, and this is difficult to do -- ignore the arrows. That's not normal.

So ignore the arrows. Look at everything else that doesn't have an arrow, things like this, and remember that we're cutting -- in order to show you on this, we're taking a photograph -- we're taking a piece of tissue and we're cutting it sideways into slices, so you don't get the three-dimensional structures. So this is normal.

Remember Swiss cheese? If you cut a slice of Swiss cheese, you're going to have very thin,

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

what we call septa, and in the center is an air sac. That's normal.

Ignore these arrows. That is abnormal.

This central part here, that's normal lung tissue.

Q. Doctor, just because for me, this is all -- the first time I ever looked at that, I thought, that doesn't make any sense to me.

MR. HUNTER: Judge, I don't think we ought to have comments like that.

THE COURT: Sustained. Jury, disregard.

MR. REILLY: I withdraw it.

BY MR. REILLY:

2163

Q. Can you show the jury individual cells? Could you just circle some individual lung cells, tissue cells?

A. Each one of these black dots is an individual cell. A black dot is a nucleus.

Q. The center of the cell?

A. Right. I'll be able to do a better job than that when I show the actual photographs. This is very low power, but each of these black dots is a cell.

Q. And connected, the cells are connected?

A. The cells are connected. They make up the architecture of the lung.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

Q. So if we were to just to put this in, what part of that structure are we looking at?
A. You're taking a knife, what's called microtome, you're taking a section right there. That's what you're looking at. You're taking (indicating) a section right there, and that's how we look at it under the microscope.
Remember that you're only looking at two dimensions. You cannot look at the three-dimensional picture.
You're just looking at a section. In this particular one, there are no bronchi, so you're not

2164

taking a section through here or here; you're taking a section through alveolar tissue.
Q. All right. Doctor, let me ask you one thing.
These vacant areas?
A. That's air, air sacs.
Q. That's the center of the grape?
A. That is correct. The empty grape.
Q. The empty grape.
And this area is the wall of the grape?
A. Just think of a bunch of marbles or grapes, and you just take a slide, but the marbles or grapes are empty. That's what it looks like. Swiss cheese, just a very thin slice. That's what

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

it looks like.

And this is the architecture, what keeps the lung expanded. Actually, it's -- a lot of this is pressure, because if you take the air out, the lung will collapse. So the air keeps it expanded, keeps the air sacs open.

Now, this picture I took close to but not into the malignancy or cancer, and take into account that this is a much higher magnification. That is magnified probably 40 times. This is magnified 400 times.

2165

And here you see -- here's an air sac, but what should strike you here -- incidentally, all these are cells. Again, the black dots are cells. And here is an air sac. What should strike you is that the walls are very thick. That's not normal-looking. There is an abnormality here that is creating thickness of the alveolar wall.

The distance between the holes is too thick. So this is abnormal. But if you showed me this, I would say that's abnormal. It's what they call interstitial fibrosis, but I can't diagnose that as cancer.

However, when you sample the periphery of well-differentiated adenocarcinoma, BAC-like, that's what it looks like.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Available from www.industrydocuments.ucsf.edu/docs/jmjl0001

Okay. This is also taken from the periphery; not the cancer itself, but close to it. And in this one I want to show, once again, you see the holes, and, once again, you see the skeleton of the lung. And these are all cells, which are quite normal.

And then look at these cells in here, much larger. Look at these ones here, much larger. Then look at these ones in here. Certainly this is different than this.

2166

Here's another big one, another big one, another big one.

This is quite typical of the way well-differentiated adenocarcinoma, BACs spread.

Some people believe that they spread by air, called aerogenous, which means they essentially break off the main tumor, and by the force of air, they go into different alveoli, and since they are malignant, they're able to multiply, and that's the way it spreads.

So that is a picture of that typical pattern of spread.

This is simply a higher magnification than that one. It's the same area, very similar photograph, just to show you how different these cells are -- those are cancer cells, cancer cells --

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

from the normal alveoli cells. Cancer cell, very large. Essentially very ugly. This is the actual cancer, again, in much higher magnification.

At the center, I wanted to draw your attention -- this is a blood vessel. This is a small artery.

And surrounding it, you see holes, Swiss cheese, once again. Holes.

These holes are not the regular, nice

2167

holes of a normal lung.

As you can see, here is a finger-like projection. We call that papillary. Here are some cells that are growing into the air space.

This lung certainly cannot transfer oxygen. This is an abnormal lung. These cells are very large, compared to the size of this, compared the size of this cell, with a normal blood vessel cell. Very large. That’s cancer.

This is a bronchiole. Again, quite different.

Cancer cells spreading in a bizarre, alveolar fashion. Still holes. Very irregular. They are clearly malignant.

Basically the same thing, and the reason I took this photograph is not only to show you the holes -- sorry -- but also to show you, so you can

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

think about what I showed you before, how the cells drop into the center of the lung, into the center of the hole, and those are the ones you saw in my first photographs, the so-called air expansion, or aerogenous type of growth.

Another photograph of the tumor. Slightly different cells.

If you took many, many sections of this

2168

and took many, many photographs, you're going to see different patterns. This is a different pattern, different type of cell.

I want to draw your attention to the fact that these cells have this foaming cytoplasm. They're all based here. The nucleus is at the base, and at the top they have this foamy cytoplasm.

Q. What is foamy cytoplasm?

A. "Foam" means many holes. Little holes, foam. Here are some holes. Almost clear. Very irregular.

It's not well-defined. That's what foam is, not well-defined.

That is quite typical of BAC, well-differentiated adenocarcinoma.

Q. Doctor, is there a picket-fence design to BAC?

A. Yes. There is picket fence. Some people

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

like to say it’s tombstones. Some people use fancy names. Essentially, what they’re saying is the cells grow one right next to each other. That’s a typical pattern of what pathologists call well-differentiated BAC pattern. So it’s one cell right next to the other, abutting one against the other.

2169

And then, finally, I wanted to show you an area which I think everyone here would agree doesn’t look at all like the other areas that I showed you.

I showed you a lot of Swiss cheese.

This is American cheese. This is solid. There are no holes here.

The cells are growing together. There is no space between the cells.

Now, for your comparison, this is some inflammatory benign cells. And here are some of the malignant cells, the big ones. They’re growing in a solid fashion.

And depending on how you interpret the different classification schema, some people would believe that this, by itself, rules out the diagnosis of bronchioalveolar carcinoma, and then they would call it simply adenocarcinoma.

And that all depends on how you want to follow the different classification schemes.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/jmjl0001

This would exclude a diagnosis of BAC, under some classifications.

MR. HUNTER: Doctor, could you mark that on the back?

MR. REILLY: I'm going to --

MR. HUNTER: This particular one.

2170

MR. REILLY: You know what? I don't mind counsel --

THE COURT: I understand. Sir, just put a mark on it.

MR. REILLY: I'm going to mark them all.

MR. HUNTER: But this one I want.

THE COURT: Just mark it on the back.

(Thereupon, the witness complied.)

THE COURT: Thank you.

BY MR. REILLY:

Q. Doctor, how do you interpret all these lights all together? And I'm going to, just for the record, I'm going to call off the numbers of them.

The one you just marked was 7-B.

The one before that --

A. Counsel that's not 7-B. That's L-V.

Q. No, but up in the corner it says 7-B. You've written L-V.

The one before that is 2-C, 1-B, 2-B, 3-B, 4-B, 6-B, and 5-B. Okay?

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

THE COURT: Are you offering them in evidence?
MR. REILLY: I will be -- I'm going to offer them all together, Your Honor.
THE COURT: Thank you.

2171

BY MR. REILLY:
Q. You've shown one slide or one blow-up that you've indicated some people would call -- would cause it to call this tumor adenocarcinoma?
A. That is correct.
Q. What do you call this tumor, looking at all of the pathology?
A. I also call it adenocarcinoma, but I call it adenocarcinoma with predominant bronchioalveolar features, predominant BAC features.
Q. Does that make it a BAC to you?
A. That makes it a BAC, in the sense that it will behave like a BAC.
I don't care what you call it, the proof of the pudding is, how is it going to behave? Is my prediction of behavior going to be correct or incorrect?
Q. That's what we're going to go to in just a second, Doctor.
We have some other slides here. Are they important to show to the jury?

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

A. Well, if you want to, I'll show it.
These are --
Q. Comparisons?
A. -- comparisons from a well-known

2172

textbook -- I believe my photographs are much better.
This is a pattern of what, as you can see here, bronchioalveolar carcinoma, that's very much like this one here (indicating). If you look at them, they're very similar. And this is a photograph taken from the Armed Forces Institute of Pathology, which is a prestigious --
Q. He didn't object, but don't tell them where it's from, just because I'm not supposed to ask you where it's from.
A. Okay. Well, it's a prestigious photograph.
And they look very similar.
Anyone want to look at it a little more?
If we use the next one, this shows the finger-like projections that I alluded to before. Finger-like. Finger-like projections.
The cells growing in what I call picket fence or tombstone. Same thing.
If you look at that one, please compare it with this, too, I think, lower magnification, higher

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

magnification. You see this bunch of grapes, (indicating). Very similar.

And that's supposed to show how things --

2173

how they're essentially dropped from the areas of tumor and they are swept away by the air stream.

Q. Can you show that?

A. Yes. I will show that one.

And, finally, that one is very similar to -- a different magnification of the first one I showed you, where there is thickening of the wall, and there is what we call hyperplasia or abnormal growth of these cells. Close, but not in the tumor.

Very much like this. That one is black and white, and this one is in color. That's probably 40 -- 45 magnified; this is about 400 times magnified.

And what it shows is that there is something abnormal in the background of this lung.

Q. Doctor, I'd like to put before the jury the report of Dr. John Hartz from North Carolina Memorial Hospital. That's where Mrs. Routh's pathology was taken for a second opinion, not Memorial. Baptist Hospital.

Is your interpretation of Mrs. Routh's lung cancer the same as Dr. Hartz?

A. That's correct.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

Q. Did you find tumor in the middle lobe of her lung, right lung, as well as the lower lobe?

2174

A. Yes.

Q. Did Dr. Sleater, from Mission St. Joseph, make any mention in his pathology report to finding tumor in the middle lobe?

A. No, sir.

Q. Doctor, I'd like to switch now from the pathology to the clinical appearance of this patient, this person.

I have a time line, which is upside down.

You indicated that her -- you predicted how she would progress --

A. That is correct.

Q. -- as a patient, right?

A. Yes.

Q. Could you explain to the jury, from a clinical standpoint, how Mrs. Routh progressed and why her progress -- what the aspects of the progress of her disease caused you to believe that this is a different kind of tumor?

A. Well, remember, that I made the predictions before I knew this, because I looked at the slides before I looked at the data and what had happened.

Furthermore, when I was shown the data, I

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

was only shown the data up to here.

What I said was right here, that it was a well-differentiated tumor with bronchioalveolar features, and I said that it probably would have been there and probably visible a year, maybe two years before. It turns out that a previous chest X-ray showed the two-centimeter mass. I would not be surprised if she had another chest X-ray, say, some time in 1997, that it would have shown a one- or two-centimeter mass, slightly smaller than that, because that's the usual behavior of this tumor.

Then it is diagnosed, and it is treated.

And you don't have anything about the treatment in here, but I'm going to add that she got chemotherapy and she got radiation therapy after surgery.

So the tumor is removed, and then there's a discussion as to what should be done; there's differences of opinion. And eventually this lady ends up getting radiation and chemotherapy after the surgery.

And then there is a very significant, what we call disease-free interval. This is the disease-free interval.

Q. Which means there's no cancer?

A. Well, the cancer is there; we can't detect

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

2176

it. It is clinically undetectable. That's the disease-free interval.

And it goes for more than two years. That's very unusual. Most of the varieties of more aggressive tumor, the ones associated with regular smoking, the disease-free interval is a matter of a few months, not two years.

So this, in itself, is unusual, and it's quite consistent with the diagnosis of well-differentiated BAC.

Then she recurs. And biopsy is done. And we know that she has a recurrence. It is documented.

Then they meet with this lady. She doesn't -- well, she cannot get anymore radiation, but it is my understanding that she refused the chemotherapy, and she was offered what was at that time an experimental drug, Iressa.

And I said that she had 25 percent chance of a response.

It doesn't sound like a lot, but after a treatment with chemotherapy, remember I said that the response rate of chemotherapy, right here, at the time of diagnosis is somewhere about 30 percent.

And the response rate of chemotherapy,

2177

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf Available from www.industrydocuments.ucsf.edu/docs/jmjl0001

once the tumor has recurred, is less than 10 percent.

So for those of you who do not treat cancer of the lung, you may say, "Well, less than 10 and 25 percent is not a big deal," but, for us, who deal with this every day, it's an enormous, enormous advance. Thank God, she's in that 25 percent of response.

And now we know that the majority of response in nonsmokers and a significant percentage has what most pathologists would interpret as BAC.

So her progression and her response has followed very close to what I predicted.

THE COURT: Mr. Reilly, if you're not just about done at this moment, we'll break for lunch.

MR. REILLY: Your Honor, I'm about done, but I know that somebody needed to leave.

THE COURT: Right, a commitment that one of the jurors has. We'll break for lunch at this point and be back at 1:30, since we won't finish with this witness before lunch.

Members of the jury, please, do not discuss the case among yourselves or let anyone talk to you about it.

2178

Sir, don't talk to anyone about the case.

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Support provided by www.industrydocuments.ucsf.edu/docs/jmjl0001

(Thereupon, a lunch recess was at 12:00 p.m.)

http://legacy.library.ucsf.edu/tid/zqr07a00/pdf
Available at http://www.industrydocuments.ucsf.edu/docs/jmjl0001